Fig. 1

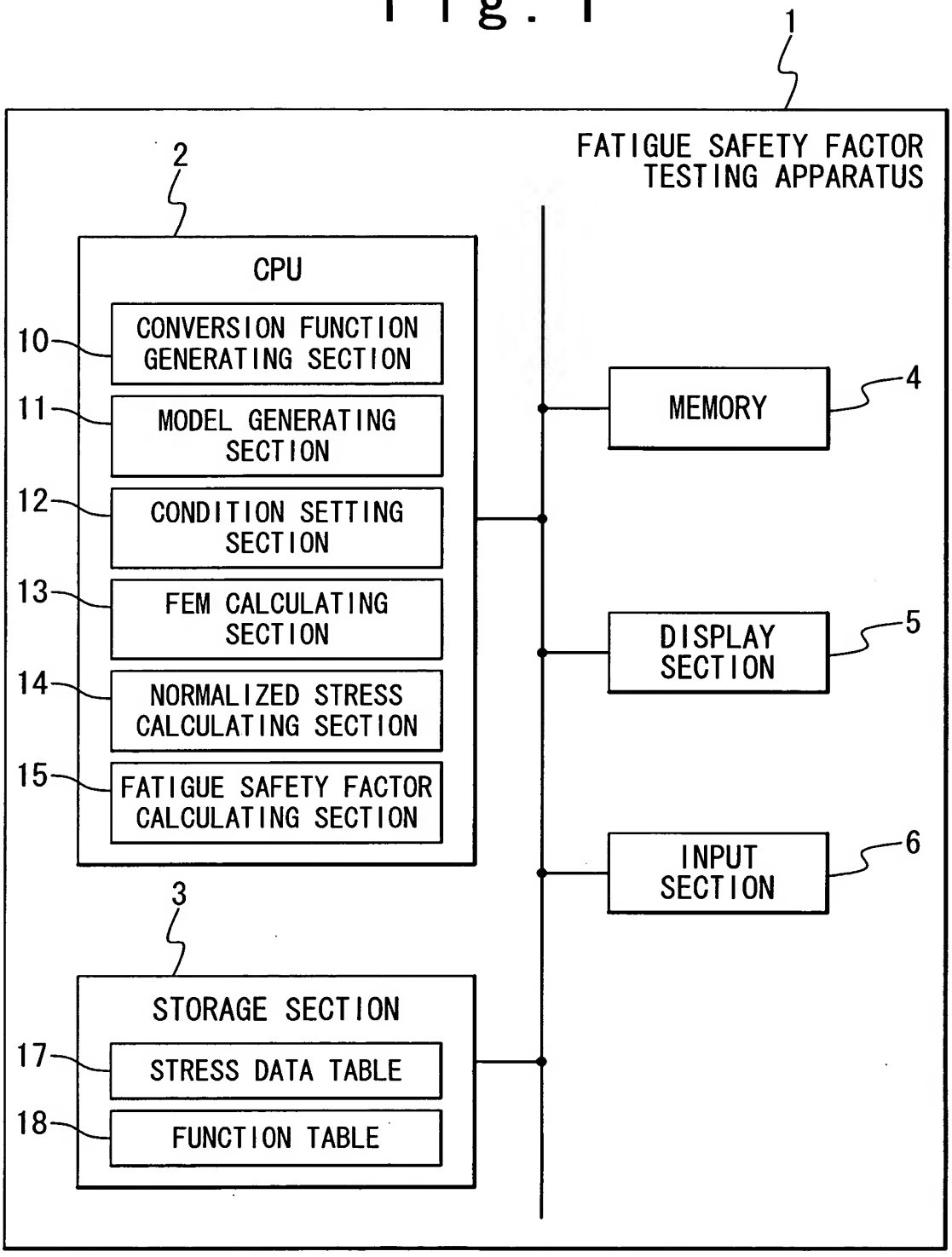
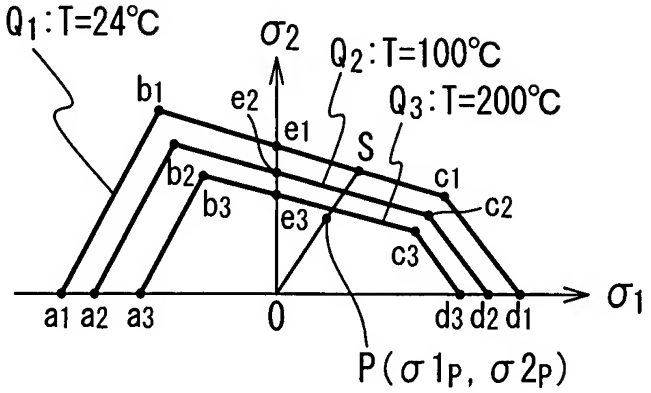

1
FATIGUE SAFETY FACTOR TESTING APPARATUS
2
CPU
10
CONVERSION FUNCTION GENERATING SECTION
11
MODEL GENERATING SECTION
12
CONDITION SETTING SECTION
13
FEM CALCULATING SECTION
14
NORMALIZED STRESS CALCULATING SECTION
15
FATIGUE SAFETY FACTOR CALCULATING SECTION
3
STORAGE SECTION
17
STRESS DATA TABLE
18
FUNCTION TABLE
MEMORY
4
DISPLAY SECTION
5
INPUT SECTION
6

Fig. 2A



$\sigma U_1 = f_A(\sigma_1, T)$
$\sigma U_2 = f_B(\sigma_2, T)$

Fig. 2B

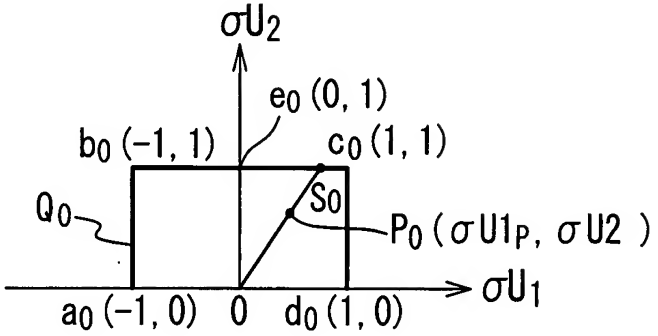


Fig. 3

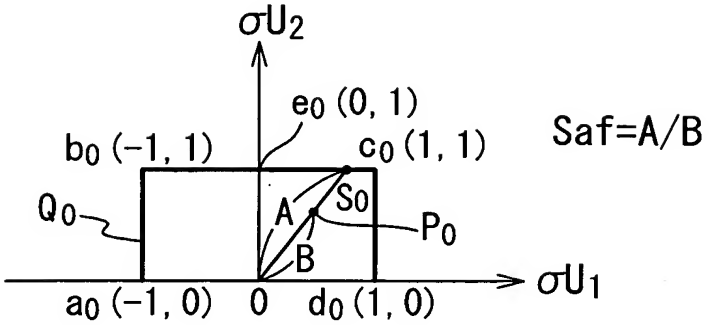


Fig. 4

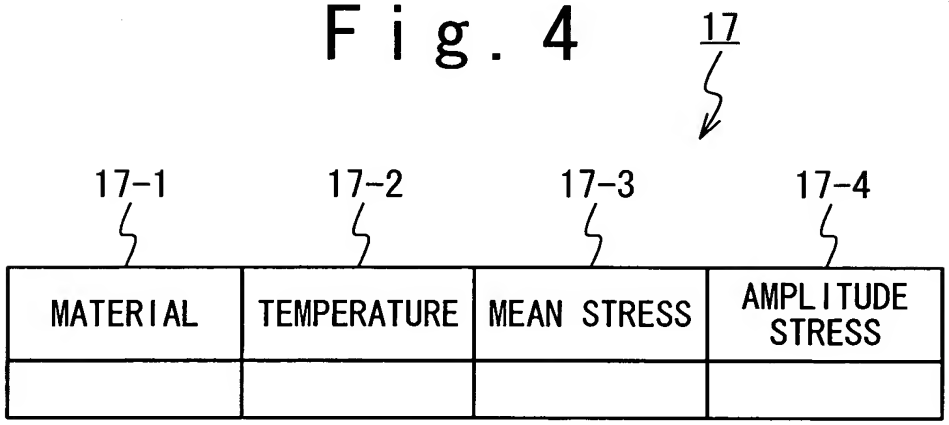


Fig. 5

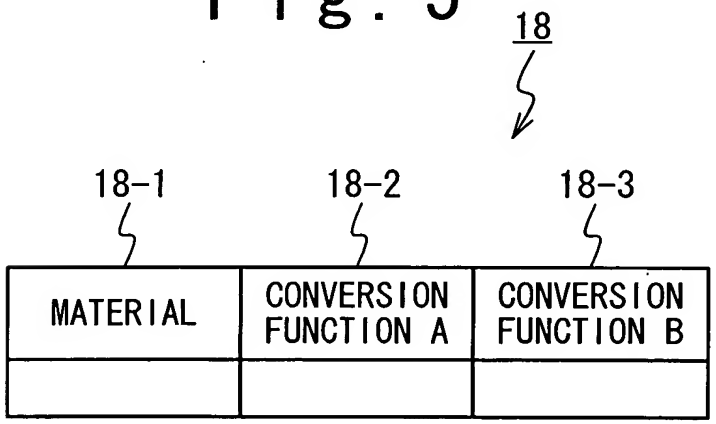


Fig. 6

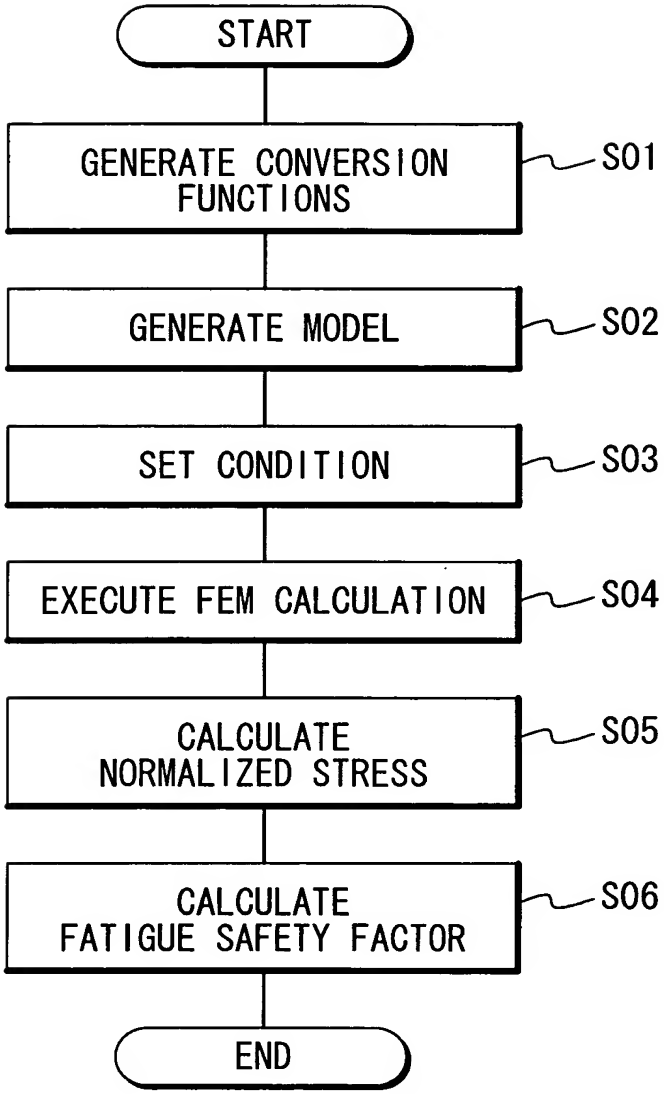

START
GENERATE CONVERSION FUNCTIONS
S01
GENERATE MODEL
S02
SET CONDITION
S03
EXECUTE FEM CALCULATION
S04
CALCULATE NORMALIZED STRESS
S05
CALCULATE FATIGUE SAFETY FACTOR
S06
END

Fig. 7A

21

Node	σ	T
1	10.3	154.
2	23.0	56.
3	-4.5	230.
⋮	⋮	⋮
100000	12.8	280.

σU=f(σ,T)

S05

Fig. 7B

22

Node	σU
1	0.89
2	0.62
3	-0.15
⋮	⋮
100000	1.2

CALCULATE FATIGUE SAFETY FACTOR

S06

Fig. 7C

23

Node	Saf
1	1.2
2	1.4
3	7.2
⋮	⋮
100000	0.8